Summary of Recent Florida Election Issues as Reported by Voting System Vendors

California Secretary of State
Bill Jones

October 2002

Summary of the Problems

Nearly sixty percent of Florida voters cast ballots on new voting equipment in the September 2002 primary election. Of Florida's 67 counties, 41 installed and used new equipment for the September 2002 election – 15 counties purchased more than 33,000 touch screens and 26 counties purchased Optical Scan systems.

30 used Diebold systems
(Alachua, Brevard, Calhoun, Citrus, Columbia, De Soto, Dixie, Duval, Flagler, Gilchrist, Glades, Hardee, Hernando, Jefferson, Leon, Levy, Madison, Manatee, Monroe, Okaloosa, Okeechobee, Osceola, Polk, Putnam, Seminole, St. Lucie, Taylor, Volusia, Wakulla, and Walton)

32 used ES&S systems (Marksense and DRE)
(Bay, Bradford , Broward, Charlotte, Clay, Collier, Escambia, Franklin, Gadsden, Gulf, Hamilton, Hendry, Highlands, Holmes, Jackson , Lafayette, Lake, Lee, Liberty, Marion, Martin, Miami-Dade, Nassau, Orange, Pasco, Santa Rosa, Sarasota, St. Johns, Sumter, Suwannee , Union and Washington)

5 used Sequoia systems (Marksense and DRE)
(Baker, Hillsborough, Indian River, Palm Beach and Pinellas)

Diebold

According to Diebold, their DRE systems were not used in Florida counties in the September 2002 primary election.

Diebold did not identify any issues specific to the Florida election, however they did offer the following information as related to the Maryland and Georgia primary elections.

ISSUES IDENTIFIED BY DIEBOLD
1. Delay in poll opening and closing
Attributes the delays to procedural training issues.

DIEBOLD'S RECOMMENDATIONS TO THE VSP

1. Recommends that poll worker training take place in short durations and in small class sizes. Recommends cross-training poll workers to serve in multiple roles on Election Day and ensure that poll workers master the opening and closing procedures.

2. If manually transporting memory storage cards to election central, collect the memory storage cards as soon as possible after the polls close and deliver them to election central.

3. If utilizing the modem transport feature to transmit election results to election central, verify that they correct telephone number is programmed into the system.

ES&S

According to ES&S, most counties that used their DRE system experienced only minor difficulties that would be common to any automated election environment.

ISSUES IDENTIFIED BY ES& S

1. Delays in poll opening

Suggests this was due to "personnel and procedural issues" including poll worker shortages, lack of training, and one-third of the iVotronic memory cards being improperly installed

2. Failure to complete results collection

ES& S' RECOMMENDATIONS TO THE VSP

ES&S did not provide any recommendations.

Sequoia Voting Systems

According to Sequoia Voting Systems, the four counties in Florida that used their DRE systems experienced successful installations.

According to Sequoia, the problems encountered in the two most visible Florida counties, Miami-Dade and Broward, fall into one of five categories which they list as: 1) poor system design; 2) incomplete software development and certification; 3) late delivery of untested equipment; 4) equipment malfunction; 5) of the lack of clearly defined and established procedures and instructions, training materials, and contingency plans.

ISSUES IDENTIFIED BY SEQUOIA VOTING SYSTEMS

1. Equipment malfunction

Suggests that counties examine each piece of voting equipment to ensure proper functionality before delivery to voting locations.

2. Inadequate pre-election planning
   Suggests that adherence to critical event timelines is essential to a successful transition.

3. Insufficient poll worker training and voter education
   Suggests that counties who conducted small workshop-sized training classes and tested poll workers to ensure that they understood the procedures were most successful. Also suggests that vendors do not make any changes to the system during the election cycle.

4. Insufficient election day staff support
   Suggests that technical support staff should be stationed at polling places where poll workers are inexperienced or inadequately trained to ensure that polling places are opened on time.

5. Inability to seamlessly accommodate multiple ballot languages

6. Last minute software revisions
   Suggests that a deadline is set in which all changes must be made or a backup system is put in place if a vendor can not meet the deadline.

SEQUOIA VOTING SYSTEMS' RECOMMENDATIONS TO THE VSP

1. Set specific deadlines by which all design changes and software enhancements must be certified and installed well in advance of the election so that thorough testing may be conducted and procedures defined.

2. Recommend quality control requirements for equipment manufacture and stringent county acceptance testing in order to prevent Election Day equipment malfunction.

3. Review all software change procedures and software revisions to ensure that unintended problems are not created when system enhancements are rolled-out.

4. Review procedures for potential points of failure or post-election challenge including: equipment acceptance testing, pre-election testing of equipment and software, pre-election equipment delivery and security, poll opening, voting, poll closing, ballot tabulation, post-election canvass, post-election equipment retrieval and storage, hand and electronic recounts, election contests and the official canvass of the vote.

ES&S

Aldo J. Tesi
President and CEO

VIA FACSIMILE (916) 653-3214 AND OVERNIGHT DELIVERY

October 22, 2002

Mr. John Mott-Smith
Chief, Elections Division
California Secretary of State
1500 11th Street, Room 590
Sacramento, California 95814

Dear Mr. Mott-Smith:

Thank you for the opportunity to provide this report for your Voting System Panel. We appreciate the opportunity to discuss this in greater detail in person on October 30, 2002.

In your letter dated September 25, 2002, you requested information concerning our September Primary Election experiences from Florida, Georgia and Maryland. We are happy to provide you with this information as it relates to our clients who conducted elections on that day. For the month of September, our clients conducted 1,018 elections. Specifically on September 10th, our clients conducted 814 elections. For the specific states requested, we had 30 clients in the State of Florida, 85 clients in the State of Georgia, and 18 clients in the State of Maryland.

For purposes of this letter, we will focus on the clients that had recently changed election systems. In addition, because we understand the focus in California is on the touch screen DRE systems, we will focus only on those iVotronic countywide users.

ES&S supported 30 counties in Florida during this past September 10th election. Eleven counties ran touch screens using the iVotronic system countywide. An additional 13 counties used the iVotronic as an in person absentee system referred to as early voting in California. The remaining six counties used ES&S' optical scan systems for both Election Day voting as well as absentee voting.

With the exception of Sarasota County, these counties were holding their first countywide use of the iVotronic on this date. In total, this represented over

22,000 iVotronics. In nine of the eleven counties, these first elections were considered very successful. Only minor difficulties were experienced that would be common to any automated election environment. Because of the nature of automated elections, all jurisdictions plan for a certain level of mechanical issues and provides for back up and contingency measures. We were pleased to find that our analysis indicates that the performance levels of the iVotronics were better than the contingency planning the counties had contemplated.

Of the eleven counties that used touch screen voting countywide, two high profile counties shared similar experiences on Election Day. Both Broward and Miami-Dade encountered delays at poll opening and also at final collection of results at the conclusion of the voting day. Each county has undertaken internal reviews and concluded that the iVotronic systems and the services provided by ES&S were not the cause of those problems. While we are pleased by those findings, we are disappointed at the overall performance of the election. We are working closely with both counties in the areas of staffing and training to improve performance in the November General Election.

We have summarized below the two major problems experienced by both counties and the corrective actions they have taken.

Delays in Poll Opening: Both Broward and Miami-Dade experienced delays in opening the polls. The reasons for this varied between the two counties, but came down primarily to personnel and procedural issues.

In Broward County, shortages of poll workers, confusion over polling place assignments, and a lack of training combined to create confusion on Election Day. To assist with poll opening, ES&S and county support personnel went to the polling places and assisted poll workers in performing these procedures. We did not repair or replace voting units as a part of this support. In preparing for November, Broward County is assigning adequate poll workers to specific locations, assigning additional county staff to ensure that poll workers are present, ensuring procedures are followed and expanding poll worker training.

In Miami-Dade County, poll opening delays were caused by multiple factors. First, many poll workers felt as if they had received insufficient training (two or three hours) to comfortably perform their responsibilities, including the poll opening and closing procedures. Second, the poll opening procedure had been revised the week prior to the election and this change in procedure confused poll workers. Third, nearly one-third of the county's iVotronics had their memory cards incorrectly inserted. Without being able to properly read these memory cards, the iVotronic units could not proceed with the poll opening process. Fourth, some poll workers removed the Personalized Electronic Ballot (PEB) during the poll

opening process. This caused additional delays by causing the need for the system to be restarted.

In preparing for November, Miami-Dade is loading ballot data onto the terminal prior to Tuesday and replacing the standard poll opening procedure with a terminal unlock procedure. Miami-Dade is also expanding training for poll workers and assigning additional county staff to assist and support the poll workers. While not being utilized until next year, ES&S has also implemented measures to shorten the poll opening process and improve the messaging provided to the poll workers.

Failure to Complete Results Collection: The iVotronic system is designed to utilize very strong administrative controls. It was designed to allow poll workers to open all terminals with one master PEB. During this process, the serial numbers and quantity of terminals opened are recorded. When followed, this procedure protects the poll worker from forgetting to collect all votes from all terminals at the end of the voting day. Perhaps due to the confusion from poll opening or fatigue from the extension of the polling hours, both Broward and Miami-Dade experienced similar issues at poll closing. In Miami-Dade, revisions in the poll opening procedure required the poll worker to use two PEBs rather than one. Also, both counties found that some poll workers simply did not react to the information provided to them which indicated that not all terminals had been closed or collected.

As a result, the county and ES&S worked together to gather the voting equipment from the affected polling places and then re-perform the vote collection process. While resulting in high-profile delays, none of the vote information was lost or required any extraordinary measures to recover. For the entire 22,000 units used in the State of Florida, only four iVotronic units required any technical repair in order to collect vote results.

In both Broward and Miami-Dade, the corrective actions are focused on increased poll worker training and procedural revision to use the administrative controls built into the iVotronic system.

Other Florida counties did experience some minor issues. Because voting terminals are electronic devices and are deployed in high numbers for use by the general public, a limited number of equipment problems should be anticipated. While incidences as outlined below occurred, they did not disrupt voting in any polling place nor did they jeopardize the integrity of voting results.

Collier County failed to clear a number of votes cast from their pre-election data. This caused the totals to be different from the precinct totals when transmitted. ES&S' Election Reporting Manager caught this error when it

was red flagged by the system. Collier County cleared all votes from the pre-election data and recollected the terminals from the precincts that were affected.

Lee County had a number of instances where the unit was having a calibration problem. This was noticed by the poll worker because they use poll worker activated voting. After sending out a technician it was noticed that the screen calibration was not saved during maintenance or testing of the unit. Procedures are being changed to correct this action.

There were some video display problems in different counties at the start of the day. ES&S recommended pulling these units from the field and replaced them with back-up units. Repairs to these units could include the re-seating of cables or possible replacement of components.

There were some PEB problems in different counties at the closing of the polls. The back-up PEB was available at each polling site and was used to complete the closing of the precinct. ES&S has discovered a unique set of circumstances that caused this situation and corrective actions have been put in place.

In reviewing the above situations that occurred in Florida, we believe improvements in training and procedures would have avoided the issues that impacted the voters and poll workers. The findings from Florida Secretary of State, Jim Smith, as well as reviews within Broward and Miami, confirm that training and lack of administrative coordination were the root cause of the election issues.

ES&S has proactively worked with all of our Florida customers to make needed improvements. At our recent Florida Users meeting, our customers provided positive feedback on the performance of our voting systems and the responsive support from our employees. On September 10, over 22,000 iVotronics were deployed statewide in Florida. No votes were lost or missing in the election totals. Feedback from the voters was positive. ES&S is committed to learning from this experience and to taking needed actions for Florida and other states that will conduct elections using the iVotronic.

In regards to recommendations for avoiding similar problems in the future in California, we believe there are many steps already in place to support this objective. Here are some of the steps.

- The current procurement process within the county allows time for public review, product demonstration and election trials. This will allow each county to make a fully informed decision regarding the touch screen voting system.

- The iVotronic has been enhanced with new open and close on-screen help procedures. The multiple language bit map system performance has been enhanced to reduce open and closing timeframes. Also, the iVotronic has another option of being programmed and opened in advance from a central site prior to precinct delivery. Once delivered, the unit is activated with a password by the poll worker at opening of the polls.

- In California, under the leadership of Lou Dedier as General Manager, ES&S will establish two new customer training and support facilities located in northern and southern California. These facilities will deliver local, professional election services which includes training. It is ES&S' intent to implement a "Certification" program for the training of election administration staff and poll workers. This should ensure the readiness within the county to conduct elections using the ES&S voting system.

- There were nine counties in Florida and many others across the country that successfully implemented a countywide iVotronic election. We know it works and there is no reason why counties in California should not have the same experience. In fact, they will benefit from the many lessons learned by ES&S in supporting these counties.

On the letter you sent to ES&S, you have the words **"Ensuring the integrity of California's election process."** We share that same spirit at ES&S. For more than 25 years, ES&S has built a solid reputation of delivering quality products and services within the election community. While we were not pleased with the overall election performance in Miami and Broward, we were pleased with the performance of the iVotronic and our entire voting system. We remain committed to helping Miami and Broward to have years of trouble-free elections, as well as all of the counties and states we serve.

Very truly yours,

Aldo Tesi

Aldo Tesi
President and CEO

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Chairman of the Board,
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October 21, 2002

The Honorable Bill Jones
Secretary of State
State of California
1500 – 11th Street, Room 590
Sacramento, CA 94244-2600

Dear Secretary of States Jones:

The 2002 Florida election media frenzy, initiated by a large number of late poll openings, became a contagious theme in many election related articles that were published involving the September 10th Primary Elections. The publicity created by Florida caused minor election issues in other states to be unrealistically exaggerated, whereby, very successful elections were then labeled as troubled in some articles. The Diebold touch screen technology was not utilized in Florida precincts during the Primary Election.

Even though we all strive for perfection in our elections, the involvement of the human element in any election can cause issues to arise, whether they are voter or poll worker related. However, the recent elections in Maryland and Georgia, which utilized Diebold Election System's touch screen technology, were very successful, based on the opinions of election officials within the states. Most importantly, the voters in these states benefited from the use of the new technology and were extremely pleased with their voting experience. Voters expressed confidence in the Diebold system, and benefited from features including voice guidance for visually impaired voters, and language options.

Four counties in Maryland used the Diebold touch screen system county-wide for the first time on September 10th. These counties were Prince George's, Montgomery, Dorchester, and Allegany. Two counties in Georgia, Hall and Marion, successfully deployed the touch screen technology for the first time as well on August 20th, and also used the system for run-off elections on September 10th. In addition to these installations, the system has already been used for several elections in Johnson County, Kansas, Tippecanoe County, Indiana and the City of Norfolk, Virginia. Currently, fourteen California counties utilize the capabilities of our GEMS software, and seven counties: Alameda, Los Angeles, Marin, Plumas, San Luis Obispo, Trinity and Tulare use Diebold's touch screen voting stations for early and precinct based voting. As a point of information, Diebold's AccuVote-TS system was the first touch screen system certified in California, and has been successfully utilized in California elections since 1999.

Diebold's track record of successful elections stems from several unique elements we bring to the election marketplace. These elements include an extensive nationwide service and support organization, proven training programs, demonstrated voter outreach programs, financial resources through Diebold Credit Corporation, and consistent, high quality products produced in one of Diebold's ISO 9000 manufacturing facilities located in the United States. Our tiered manufacturing architecture enables Diebold to meet customer contract requirements, even when several large jurisdictions have similar implementation schedules. This manufacturing capacity is even more important today in light of the pending approval of the Election Reform Bill. We are the only true turn-key supplier in the election system marketplace.

Our long standing partnership with the National Federation of the Blind has significantly contributed to the increased accessibility of Diebold products. Working closely with the technical staff of the NFB will enable Diebold to continually lead the marketplace in voting station accessibility.

The following is a description of the issues that were presented by newspaper articles following the elections where our touch screen technology was deployed. Please review this information and if there are any additional issues that have been raised that are not contained within this document, please bring them to my attention and we will be glad to respond to them as well.

I look forward to the upcoming November 5th election, when over 34,000 Diebold touch screen voting stations will be used to enhance the voting experience for 12 million voters throughout the United States, and, in particular, when our technology will be used countywide in Alameda and other California counties.

Sincerely,

Wally O'Dell

Wally O'Dell

Maryland Primary Election – September 10, 2002

Issues surrounding opening and closing polls. Delayed precinct opening and closing times were a procedural training issue that occurred in Montgomery County, Maryland. During the recent Primary Elections, Diebold Election System touch screen voting stations were used in four Maryland counties: Montgomery, Prince George's, Allegany and Dorchester. Montgomery County was the only county of the four that experienced these delays.

Montgomery County elected to hand carry memory storage devices from each precinct to election central after the polls closed, instead of using the available modem feature to quickly transmit election results. This method of election result collection had been used to collect punch card results in the county for many years. Memory devices were not expeditiously transported from the Montgomery County precincts, causing tabulation of election results to extend later into the evening than initially expected.

This delay was caused by election workers completing time consuming paperwork at the precinct before leaving to transport the election results. As experienced during punch card elections, poll workers lined up outside election central in their cars to drop off memory devices from each precinct. To complicate the situation, the Montgomery County Web site server failed during the evening of the election, so results could not be posted on the county's Web site. The failure of the Web server had no correlation to the operation of our election system.

Prince George's County utilized the modem capabilities of the voting stations and results were accurately tabulated without delay from precincts in the county by 11:00 p.m. Polls closed at 8:00 p.m.

Touch screen voting station reliability was extremely good in all four Maryland counties, with less than one half of one percent (<.5%) of the 5,200 voting stations deployed having any type of technical or operational difficulty. The majority of the reported issues included training related issues concerning demonstration voting stations at a selected number of precincts, not terminals used for actual ballot accumulation.

Georgia Primary Election – Hall and Marion Counties – August 20th, 2002

"In Fulton County, Georgia, at least 11 percent of the touch screen machines failed. In Gwinnett, election supervisor Lynn Ledford estimated that failure rate at 50 percent or higher."

"But Ledford was relieved to learn the machines worked well in Hall and Marion counties, the only counties where real primary votes were recorded electronically."
(Atlanta Journal Constitution)

First of all, let me state that Diebold touch screen voting stations performed flawlessly in Hall and Marion counties where they were staged and utilized for actual ballot collection. The elections in these two counties were two of the most error free elections experienced by many of the election officials.

Demonstration touch screen voting stations were displayed at precincts other than those in Hall and Marion counties, enabling voters to become familiar with the unit's operation before the November General Election. Virtually every touch screen terminal used as a demonstration model in Georgia on September 10th operated flawlessly. The terminals were to be programmed into the "demonstration mode" so the voter cards (smart cards), used to retrieve the demonstration ballot in each touch screen terminal could be re-used over and over again for demonstration purposes. Complete instructions were presented to each precinct based election official.

Election officials at many of the precincts pushed the "election mode" location on the touch screen, instead of placing the touch screen terminal into the "demonstration mode," thus placing the terminal into an election-like operation. This operation includes enabling voter cards to be utilized once per voter, and then requiring the voter card to be re-initiated by a poll worker for the next voter. This operation eliminates a single voter from using the voter card to vote numerous times while at the voting station. This is exactly how the touch screen voting stations are designed to operate, providing increased security against voter fraud. However, since the cards could not be re-used within the precincts for demonstration purposes, election supervisors viewed the terminals as having failed, which was actually not the case.

A limited number of demonstration touch screen machines did experience startup issues due to the terminals not having the latest software revision loaded, as these units were not to be used in the actual election. Overall, system operation and reliability of the touch screen terminals used in Hall and Marion counties was extremely high. Voter acceptance was also very good, with many voters stating they liked the operation of the touch screen and the clear, bright presentation of the ballot.

"Riggall said an extensive training program for poll workers, a planned software upgrade and ample technical support on Election Day should hold problems to a minimum. The training and software upgrade already had occurred in Hall and Marion counties, where actual electronic voting was near- flawless." Chris Riggall is the public relations person for the Secretary of State of Georgia.

"Certainly the best measure of the performance we expect was in the two counties where we were configured to actually hold an election," Riggall said.

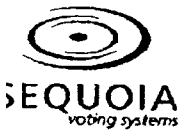
Hall County elections chief Anne Phillips said she was thrilled with the system. "We had a really good day," she said.

Touch Screen System Implementation Recommendations

1. Conduct poll worker training in an area with no distractions.
2. Classes should be relatively short in duration to insure no lapse in attention by the attendees.
3. The number of class attendees should be limited to insure each attendee can have their questions answered and can have hands-on practice with the voting station.
4. Opening and closing procedures should be presented as an important part of the poll worker training class, not something that is saved until the end of the class.
5. Allow poll workers to repeatedly proceed through the entire process as if it were Election Day, with as much hands-on exposure as possible.
6. Make sure each poll worker can function in more than one role at the precinct. This insures that a precinct can function effectively should poll workers responsible for a specific function not show up on Election Day.
7. Have each poll worker complete the opening and closing procedures utilizing only the documentation provided, with no other assistance.
8. Quiz the poll workers on how to respond to worst case scenarios, so they will know how to react if something unforeseen occurs.
9. Make sure each precinct judge is fluent in the operation of opening and closing the polls
10. If manually transporting the memory storage cards back to election central, collect the memory storage cards as soon as possible after the polls close, and deliver them directly to election central. In some cases, a "runner" is used to collect the memory storage devices from a selected number of precincts.
11. If hand carrying the memory storage cards to election central, take the extra time required for this activity into consideration when informing the media of election result presentation expectations.
12. When utilizing the modem transport feature to transmit election results to election central, verify that the correct telephone number with correct prefix is programmed into the system.
13. Ample time is required to adequately stage voting stations whether they are used for the actual election or for demonstration purposes.

SEQUOIA VOTING SYSTEMS

October 25, 2002



John Mott-Smith
Chief, Elections Division
California Secretary of State
1500 11th Street
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Dear Mr. Mott-Smith:

Thank you for the opportunity to contribute to the discussion of the issues and problems that surfaced in the recent deployment of new voting systems in Florida, Georgia, Maryland and other jurisdictions during the 2002 gubernatorial primary elections. Responding on behalf of Sequoia Voting Systems and as a former California Registrar of Voters who implemented a Direct Recording Electronic voting system from punch cards in 1994, I applaud your leadership in creating this forum to highlight the risks inherent in these voting system implementations. With more than fourteen years of experience installing DRE voting systems, we at Sequoia feel that we can offer you and the Panel a uniquely valuable and credible perspective on the problems that arose and how California can avoid repeating them in 2004 and beyond.

Sequoia performed the first large jurisdiction punch card to DRE installation in the nation beginning in 1994 in Clark County, Nevada, when I was Registrar of Voters there. During the 2000 Presidential Election, we assisted and supported Mischelle Townsend in implementing the first countywide touch screen installation in the nation when Riverside County purchased our AVC Edge® voting system. The unrivalled success of this installation laid the foundation for counties such as Alameda and Los Angeles to begin implementing touch screen voting well before the Secretary of State's September 2001 decertification of the Votomatic and Pollstar systems required them to replace their punch card voting systems.

In 2002, under the very close scrutiny of state and national media, Sequoia Voting Systems installed its AVC Edge® voting machines in the Florida counties of Palm Beach, Pinellas, Hillsborough and Indian River—3 of the 5 largest counties in the State. By all accounts, public and private, the September primary elections in these counties were unqualified successes, and these election supervisors were praised for the smoothness of their voting system implementations.

In addition, Sequoia Voting Systems signed a contract with Snohomish County, Washington, the 3rd largest county in the State, only five short weeks before

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their September 17th primary election. Washington Secretary of State Sam Reed has praised Snohomish County for the success of its installation and publicly offered it as a model to the rest of the nation as they move to install new voting systems. This implementation demonstrates that the major challenges of a short procurement and implementation timeframe can be effectively managed with the support and expertise of an experienced vendor.

Following are the registered voter and polling place statistics for the five counties that successfully implemented Sequoia Voting Systems' AVC Edge® during the 2002 primary elections.

County	Registered Voters	Precincts	State Rank
Palm Beach (FL)	705,224	643	3 of 67
Pinellas (FL)	569,857	383	4 of 67
Hillsborough (FL)	519,166	353	5 of 67
Indian River (FL)	76,775	54	33 of 67
Snohomish (WA)	314,787	703	3 of 39

These large jurisdiction touch screen voting system installations were successful because Sequoia Voting Systems timely delivered a well designed, manufactured and tested voting system; provided a dedicated and experienced project management team to manage all risks associated with the implementation; and provided thorough training and documentation of simple, well established procedures.

Most of the problems that occurred during the recent installations in Georgia, Maryland, and the Florida counties of Miami-Dade and Broward can be attributed to one of the following: poor system design; incomplete software development and certification; late delivery of untested equipment; equipment malfunction; or the lack of clearly defined and established procedures and instructions, training materials, and contingency plans. All of these failures are failures on the part of the vendor to act as a strategic business partner of the jurisdiction and effectively manage the risks of the installation, whether or not these deliverables were clearly stipulated in the respective contracts.

California and the rest of the industry must learn from the successes and failures of all of these voting system installations. In response to the request from the Voting Systems Panel and as part of Sequoia's standard post-election review process, we offer the following facts and analysis of the 2002 primary elections.

2002 Voting Systems Installations

Issues in Sequoia Counties

Pre-Voting Demonstrations

In two of Sequoia's counties, election officials set-up a demonstration machine in each polling place to help teach voters how to use the system before they cast their official ballot. To ensure voters were not voting on the wrong machines, the demonstration equipment was programmed to be activated manually rather then with the use of the smart cards used for the official ballots. Some poll workers were not thoroughly trained on how to operate the demonstration machines and attempted to activate them with a smart card, but were (by design) unable to do so.

This issue had no effect on any voter's ability to cast a ballot.

Card Activators

Ballots on Sequoia's AVC Edge® are activated when the voter inserts a smart card, our "Voter Activation Card," into the yellow slot on the front of the machine. The cards are encoded with each voter's precinct and party information as they are cleared to vote. The cards are de-activated and ejected by the Edge when the ballot is cast.

Sequoia strongly believes that there should be no single point of failure for a voting system. To ensure all polling places open on time and all voters can cast ballots at all times, we send two card activators to each polling place. During the September, 2002 election, a few card activators in one county were not programmed prior to being delivered to polling places. In each of these instances, the back-up card activator was used and no voters were delayed in voting as a result of this human error.

The issue had no effect on any voter's ability to cast a ballot.

Vote Tabulation Speed

The summary of election problems circulated by the Secretary of State's office earlier this month indicated a reference to Palm Beach County's long vote count on election night.

Because of the controversy that enveloped the county in 2000, the Palm Beach County Supervisor of Elections instituted additional safeguards to ensure an accurate count and audit trail. Rather than tallying the votes as soon as they came in from polling places, the Palm Beach County Supervisor of Elections felt that slowing the vote count was worth the additional peace of mind.
While not required or necessary, the county felt it was worth the effort.

The county's back-up procedures had no effect on the ability of any voter to cast a ballot and had no effect on the accuracy of the vote tally. It merely served as an added precaution for a county that found itself in the eye of the butterfly ballot storm in November 2000.

Issues Identified in Non-Sequoia Counties

Equipment Malfunction

The Miami Herald reported the following equipment-related problems during Election Day in South Florida:

> "Shortly after 7 a.m....at least 178 of the county's 754 precincts reported some degree of problem.
>
> "At 9:45 a.m., 68 precincts were still completely closed to voters, and 110 precincts reported that at least half their machines did not work.
>
> "By 10:50 a.m., 32 precincts were still closed – and 45 operated at only half capacity.
>
> "By 4:00 p.m. all precincts were open, although some still had inoperative machines."

The New York Times reported that, in one Miami-Dade polling place, only three of thirty machines were operational.

In one precinct with 1,039 voters in a senior community, the machines only reported 56 votes, despite reports of high turnout and considerable voting activity throughout the day.

In Broward County, votes had to be "re-harvested" when the returns revealed few or no votes in precincts with hundreds of registered voters each. Eleven of the county's 780 precincts reported turnout of less than 5 percent for an election where the statewide turnout was roughly 30 percent.

Separate from the problems in Florida, during the August 20, 2002 primary election in Georgia, at least 11 percent of the touch screen systems delivered to Fulton County failed.

Vendors must employ standardized manufacturing processes and testing to uncover any problems or weaknesses in system components prior to the delivery of equipment. Vendors should also instruct counties in how to develop acceptance-testing programs that will test the full functionality of each voting machine and cast a large volume of votes on each voting machine before it is accepted. Voting machines with any demonstrated problem should be returned to the vendor without payment. Counties should also examine each piece of equipment to ensure proper functionality before delivery to voting locations.

Inadequate Pre-Election Planning

Responsible change management requires a top-to-bottom review of plans and procedures that includes contingency plans for any potential problem. Some vendors with experience in paper-ballot elections, but with little or no experience helping counties make the transition to DRE

elections, have not effectively identified potential problem areas before they occur nor taken proactive steps to avoid them.

The development of critical event timelines and adherence to those timelines is crucial to a successful transition. In too many instances, last minute changes in system software, procedures and logistics caused a breakdown on Election Day. For example, a mistake by vendor staff in Miami-Dade resulted in the removal of statutorily required language from the ballot. When the vendor eventually made the correction to their error, they required the county to purchase and install 7,200 replacement flash cards (one for each machine) just three days prior to the election. Because the new flash cards could be inserted incorrectly (upside down), a number of cards were improperly installed and prevented machines from being properly activated on Election Day. Because of these improperly installed flash cards, many voters were turned away from the polling place without being allowed to vote.

Too often, poll workers or election department staff members have been blamed for the problems resulting from these last minute changes in software and procedures. In actuality it was the vendor's responsibility to deliver completely developed and programmed software and firmware along with accompanying documentation of procedural and instructional changes to the county in time for testing and incorporation into the poll worker training materials prior to the start of training classes.

Insufficient Poll Worker Training and Voter Education

Many counties did an excellent job working with local media and community organizations to teach voters about the new technology. In counties where the vendor provided voter educational materials for the county to use in this effort, this voter education was much more effective.

Many counties also did an excellent job working with the vendor to provide in depth, hands-on training for the poll workers in the set-up, operation, and trouble-shooting of the new equipment. Those that were successful conducted, smaller, workshop-sized training classes and tested the poll workers to ensure that they understood the critical operating procedures. These counties provided clearly written instructions and training materials to the poll workers well in advance of the election, in time for them to review the materials, become familiar with them and ask any questions they might have prior to Election Day. They also had the poll workers go the polling place before Election Day to set-up the machines and make sure they were all operational, if at all possible.

Sequoia Voting Systems has designed the AVC Edge® voting machine to be extremely easy to operate. Our philosophy has always been to keep poll worker responsibilities extremely simple, straightforward and to a minimum. All they must do to open or close the polls is turn a key. Everything is automatic. Poll workers do not have to leave their seat at the table, since the voter activates the AVC Edge®, not the poll worker. Poll workers have enough to worry about on Election Day, technology shouldn't be one of them.

Last minute changes in procedures can never be successfully communicated to the vast majority of the poll workers, whether they come from the vendor, supervisor or the governor. Any such changes are a recipe for disaster. It is critical that the vendor not make changes well into the election cycle.

Unfortunately, Miami-Dade and Broward Counties did not sufficiently prepare poll workers to operate the new voting system prior to the September 10, 2002 primary election. While some counties provided 12 hours of training and numerous tests for poll workers, poll workers in Miami-Dade received minimal training on a system that was subsequently altered after training occurred.

Reports indicate that instruction sheets provided to poll workers were either too complicated or were unable to be understood by poll workers with limited English proficiency.

Insufficient Election Day Staff Support

A fully functional Election Day hotline and ample field support from the vendor is critical to the success of a voting system implementation. Sequoia and our parent company, De La Rue plc, deployed 60 field technicians throughout our Florida counties on September 10, 2002, with great success. Reports from other counties indicate that response from technical support in the field was woefully inadequate.

The more complicated the equipment and procedures, the more on-site vendor support is necessary. Technical support staff should automatically be stationed at polling places where the poll workers are inexperienced or inadequately trained to ensure that all polls open on time. When a polling place calls for technical support, it should have to wait no longer than 15 minutes for an on-site response. One Miami precinct reported waiting five hours for help to arrive. In another precinct, poll workers complained that calls to election officials went unanswered. In still another polling place, even the troubleshooter assigned to help was unable to get three of their machines to operate.

Inability to Seamlessly Accommodate Multiple Ballot Languages

In Miami-Dade County, the county purchased a system before the vendor could demonstrate the ability to accommodate multiple languages, even though both the county and the vendor knew this was a federal requirement prior to entering into negotiations. In addition, the vendor did not deliver on its promise to have the necessary system modifications/enhancements in place, tested, and delivered to the county according to schedule. This critically impacted the integrity of the county's entire election.

The transition from a bilingual ballot to a trilingual one, required the vendor to change from a text-based design to a bitmap format. The failure to properly plan for this transition created last minute logistical hurdles with disastrous results.

Although the county originally purchased 1,000 flash cards for its audio voting machines, the late transition to the bitmap ballot required flash cards in all machines -- requiring the purchase

and installation of 6,200 additional cards. When the vendor subsequently omitted statutorily required ballot language (see section titled: "Inadequate Pre-Election Planning"), all 7,200 new flash cards had to be replaced.

Since poll workers were originally trained on the text-based design, they were unaware that the new format would require 23 minutes to boot-up audio voting machines and six and a half minutes for non-audio machines to be activated prior to the opening of the polls. The result was rampant poll worker confusion and excessive voting delays on election morning.

Last Minute Software Revisions

Many of the high profile Election Day problems in Florida can be traced to the late design and certification of the systems and software. Vendors who fail to accommodate all of a state/county's requirements well in advance of Election Day are inviting failure.

Training, voter education and logistics all rely on the final development of the software and hardware that will be used. Last minute revisions to voting software and/or operating procedures will impact every other aspect of the election administration.

A date should be set by which all changes must be made and after which no additional changes shall be accommodated, and a back-up voting system must be available should these deadlines not be met.

Optical Scan Systems:

- Dead battery on card reader in Okaloosa, FL
- Poll workers had difficulty getting some card readers functioning in Okaloosa, FL
- Ballots jammed in Duval County ballot readers
- Workers didn't know how to turn machines on in Duval
- Party ballots went to wrong voters in Duval
- Union County ballots were all recorded as Republican and required a hand count
- 42% of Orange County, FL precincts to be recounted by hand due to tears on ballots

Recommendations

Critical Design and Implementation Principles

1. System must be easy for voters to understand
2. System must be easy for poll workers to set-up, close down and explain to voters
3. More difficult tasks should be handled by well-trained professional election officials instead of poll workers
4. Plan and implement aggressive poll worker recruitment, training and voter education activities
5. Establish critical events calendars and establish realistic timelines for product delivery and deployment. Counties must hold vendors accountable for meeting deadlines.

6. Conduct trial elections with non-binding tests or during low-turnout, low complexity, low risk trial projects.

Recommendations for California Voting Systems Panel Review of New Systems and Revisions to Existing Systems

1. Set specific deadlines by which all design changes and software enhancements must be certified and installed well in advance of the election so that thorough testing may be conducted and procedures defined.

2. Recommend quality control requirements for equipment manufacture and stringent county acceptance testing in order to prevent Election Day equipment malfunction.

3. Review all software change procedures and software revisions to ensure that unintended problems are not created when system enhancements are rolled-out.

4. Review procedures for potential points of failure or post-election challenge including: equipment acceptance testing, pre-election testing of equipment and software, pre-election equipment delivery and security, poll opening, voting, poll closing, ballot tabulation, post-election canvass, post-election equipment retrieval and storage, hand and electronic recounts, election contests and the official canvass of the vote.

We applaud the California Secretary of State's decision to study the problems encountered during the recent elections. We encourage the state to adopt the above-mentioned safeguards to ensure that counties are able to conduct a successful transition to a new voting system. In the end, the voters and taxpayers will benefit and the overall confidence in our election system will be greatly improved.

Sincerely,

Kathryn Ferguson

Kathryn Ferguson
Vice President, Corporate Communications

SECRETARY OF STATE'S ANALYSIS OF THE PROBLEMS IN FLORIDA

PROBLEMS IN THE SEPTEMBER 2002 FLORIDA PRIMARY

(WITH A FEW EXAMPLES FROM OTHER STATES, TOO)

(THIRD DRAFT: OCTOBER 7, 2002)

OVERVIEW

While some of the problems in the Florida election do not fall neatly into categories, and some overlap into more than one category, for discussion purposes the problems can be segregated into problems of: (1) Planning and Administration; (2) Poll Workers; and (3) Voting Equipment.

Nearly 60% of Florida voters cast ballots on new voting equipment (a number eerily close to the minimum 56% that will be voting on new equipment in California in March of 2004). Of Florida's 67 counties, 41 installed and used new equipment for this election -- 15 counties purchased more than 33,000 touch screens, and 26 counties purchased Optical Scan systems. The state contributed $32 million on new machines, a new registration database, poll worker training and voter education programs. Counties also contributed funds, for a total of over $100 million. All this was done in a very short period of time.

It appears that once people were able to vote, they liked voting on touch screens.

Redistricting complicated the process, since approximately 30% of voters had new polling places, and poll workers had the added burden (in addition to figuring out how to use the equipment) of directing voters to the correct voting location. Miami-Dade provided a lap top to each polling place to facilitate finding the appropriate voting location for each voter.

The overall complexity of the voting process is increasing, and it is fair to say that it is difficult for poll workers to keep up. Many don't know how to use new technology and require more training, and individualized training, to manage the task.

Problems seem mainly concentrated in Miami-Dade and Broward counties – both of which purchased ES&S touch screen systems. Broward had 960,634 registered voters in 809 polling places, for an average number of voters per precinct of 1,187. Miami-Dade has 946,192 registered voters, with 754 polling places, for an average of 1,255 per polling place.

At this point, ES&S has a DRE system certified in California, but it is not currently installed in any county. Several counties, including San Francisco and San Mateo, use ES&S Optical Scan voting equipment. There were also problems with Optical Scan equipment in the Florida election.

SUMMARY OF PROBLEMS IN MIAMI-DADE COUNTY

The Office of the Inspector General (OIG) for Miami-Dade County issued a report detailing the problems experience in the election on September 10, 2002. These problems were broken down into 3 categories: (1) Planning, Organization, and Implementation; (2) Equipment; (3) Training. Miami-Dade used the ES&S iVotronic touch screen voting system.

1. PLANNING, ORGANIZATION, AND IMPLEMENTATION

The OIG indicates that all of the problems experienced in Miami Dade flow either directly or indirectly from problems in this area.

2. EQUIPMENT PROBLEMS

A. SHORT PROCUREMENT PROCESS. The RFP was issued July 24, 2001, less than 14 months before the September 10, 2002 primary election. The contract was not signed until February 2, 2002, only 7 months before the primary election. The OIG is investigating the procurement process. The Board of Commissioners, in agreeing to the contract, waived bid protest procedures.

B. FEW TEST ELECTIONS. Miami-Dade had limited opportunities to test the new voting equipment, and to give poll workers and voters hands on experience. Specifically, they had April 2, 2002 elections n Medley and Bay Harbor Islands, and a special election in Opa-Locka.

C. TRI-LINGUAL BALLOT AND CHANGE TO BITMAP TECHNOLOGY. The RFP for the voting system identified a need for a system capable of providing tri-lingual ballots. The vendor indicated that the system available at the time the contract was signed was only capable of producing bilingual ballots but would soon be updated to this capability. The bilingual ballots use a text-based technology, whereas the trilingual ballots require bitmap (essentially pictures instead of text) technology. The bitmap-based voting system was not certified until August 21, 2002, just 20 days before the election. As a result of switching at the last minute, poll workers were trained on the text-based system, the county had to cancel production and distribution of a video that would have trained poll workers and voters. In addition, the bitmap technology

required the replacement of flash cards in 7,200 voting machines, at least 320 of which had already been distributed to polling places. Some of these flash cards were inserted upside down, making the machines inoperable. The change to bitmap technology also changed the procedures and timing for opening and closing the voting machines – making activation 6 ½ minutes instead of 30 seconds, with only one master activator per polling place. Florida has no limit on the number of voters per polling place, so in some cases they had as many as 25 voting machines to activate one by one. Many poll workers would not open the polls until all the machines were activated. The revised instructions for activating voting machines were not well distributed, not clearly labeled to draw the attention of poll workers.

3. TRAINING

Training was inadequate. There was not enough of it, it was not hands on for all people, and it preceded the adoption of the bitmap technology and the parallel revised procedures to open and close polling places.

SUMMARY OF PROBLEMS IN BROWARD COUNTY

The following is an itemized listing of alleged election day problems as reported by the Broward County election official.

1. 5 PEB's malfunctioned on election day.
2. 190 iVotronic machines malfunctioned
3. Delay in programming iVotronic; programming incorrect in some instances
4. Inadequate number of field technicians
5. Calibration problems – voters selection did not represent their choice
6. Couldn't get zero tape to print at opening or closing of polling place
7. Pollworkers didn't show up, closed before 9 pm, or failed to pick up materials on time
8. Redistricting created confusion about correct polling places
9. Call center did not have enough staff

10. This was the first time provisional ballots were used, and there was some confusion.

THE FOLLOWING IS A LISTING OF PROBLEMS REPORTED BY THE PRESS

PLANNING AND ADMINISTRATION

1. "Lost" ballots found after the election. There was no requirement to document and reconcile the number of persons who signed in at a polling place versus the number who voted.

2. Poll workers not trained, or not trained enough, or not trained in small enough groups, with hands-on exposure, to activate and operate DRE's.

3. State law only requires Logic and Accuracy on 5% of DRE's. Some counties may have done more.

4. A change was made 9 days before the election to DRE software (Miami-Dade) in response to minority language requirements (English, Spanish, Creole) that changed the activation process for the machine, and the change was made after the poll workers were trained. The activation process was serial – one machine at a time (see # 3 under Poll Workers, below). The system is designed to only permit one "master activator" so only one "activation cartridge" was provided for each polling place. This caused many polls to open late, and some very late, and potential voters to be turned away. Election officials tried to call poll workers and sent memos. Early voting was done on Optical Scan systems – ES&S couldn't load all ballot styles.

5. Voting equipment does not appear to have been adequately tested in small, local elections first, before being used in a statewide election, to de-bug and to educate poll workers and voters. Miami-Dade had three small elections in April of 2002. Similar in Broward. Not at all a comparable or adequate test run, certainly not enough to train a sufficient number of poll workers or educate the public about the voting system.

6. The allegation was made that there was not enough vendor support in planning and training.

7. Inadequate acceptance testing, including "poll worker friendliness."

8. Inadequate procedures for delivery of voted cartridges to HQ.

9. Flash programming cards were installed upside down in some machines.

10. Phone lines into election office were inadequate for public or poll workers to contact HQ to find out what to do.

11. Apparently the boot up or activation problem overwhelmed the ability of trouble-shooters to respond to issues related to opening of the polling places, despite a ratio of 1 trouble shooter for every 5 polling places.

12. Some voting machines were "lost" in Miami-Dade. This may have been a "chain of custody" issue wherein the machines were not actually lost, they were still in the warehouse, they just couldn't be located.

13. Ballot design in Miami-Dade – It was discovered 5 days before the election that Democratic Party primary ballots did not indicate "Not Yet Designated" for office of Lieutenant Governor, as required by law, and 2/3 of the voting machines had already been distributed to polling places. Flash cards had to be changed on all machines, and this work was only completed on Monday night (see #9 above).

14. Governor extended voting hours throughout the state, but election officials had no mechanism to notify all polling places.

15. Sample ballot errors (Volusia County).

16. Some voters were sent more than one "voter notification card" with different political party affiliation information on each card. Some voters in Miami-Dade were not listed in the roster in the party they wanted to be in and couldn't vote in the primary election.

17. Broward County – Equipment needed to open the polls, including activators and rosters, for more than 50 polling places, as well as voter logs used as back up for computer system, had not been picked up by poll workers or delivered to inspectors before the election. Clerks came to pick up the PEB's on Monday, so the county had little time to track down and supply PEB's to those who did not pick them up. Miami-Dade had the clerks come in on Friday, so they had more time to get activators to those who failed to pick them up or to deliver them to polling places.

18. Some computers (voting machines?) were programmed to turn off at 7 pm so when voting hours were extended, they did not function (allegation of the National Gay and Lesbian Task Force).

19. Seminole County – Ran out of Republican ballots in two precincts.

POLL WORKERS

1. Unprecedented numbers of poll workers did not show up on election day.

2. Redistricting moved many voters out of familiar voting locations; poll workers had to direct voters to correct polling place.

3. Some poll workers, while activating the DRE's one at a time according to procedure, did not let any voters vote on any machines until ALL were activated. See "Planning and Administration #3 above.) Florida has no limit on the size of polling places, so there was up to 28 machines, at 6 minutes each, with 1-2 audio machines at each precinct also requiring 25 minutes for activation. The result is that many polls opened late. In Miami-Dade, at 7am 178 of 754 (nearly 25%) of precincts had problems. At 9:45, 68 (9%) were still closed, and 110 had some machines not working. By 10:50 32 (4%) were still closed and 45 were at ½ capacity. By 4 pm all polling places were open, but not all machines were operating.

4. Some poll workers refused to stay open the extra two hours required by the Governor's order. This was more apparent in Broward than Miami-Dade.

5. Democrats were given Republican ballots (Broward).

6. Poll workers didn't know they were supposed to turn on (activate) machines. (Duvall County). (See #2 in "Planning and Administration" above.)

7. Some voters denied provisional ballots (Miami-Dade). (See #2 in "Planning and Administration: above.) Miami-Dade had electronic provisionals, so if the touch screen machines were not working there was no way to vote provisionally.

8. Poll workers demonstrated how to use DRE by marking "yes" on the ballot measure to repeal gay rights ordinance (Miami-Dade).

9. Maryland, Charles County – sample ballot printing error.

10. Voters were turned away from polls if machines were not working.

VOTING EQUIPMENT (Many of these could belong under "Planning and Administration")

1. Some of the touch screen equipment "too complicated" with too many steps for poll workers to activate.

2. With some touch screens, if a voter simultaneously depresses two voting choices, the machine may show a vote for a third option. (Mercuri).

3. Screen "massage" – can disrupt accurate vote recording (not reported as an issue in Florida).

4. Optical Scan equipment could not count ballots at polling place (Orange, Duval, Union counties) due to inadequate perforation so that when ballot was "torn" from ballot book it created a rough edge and mangled the bar code so the ballot reader could not process/count the ballot. Ballots were returned to HQ for central count.

5. Machines "reset themselves" (Miami-Dade, Liberty City) routing voters back to the starting screen instead of completing voting process.

6. Electronic cards used to activate DRE's didn't work (Palm Beach).

7. Some voting machines "jammed" – Optical Scan in D.C.

8. Touch screen "stopped working" in African American area for 5 hours. (Liberty City; Broward County).

9. Broward County – "I pushed Reno button and screen showed I voted for McBride. Only on the third try did it record correctly."

10. Broward County – "At several regional vote tabulation centers faulty equipment prevented sending the information to election headquarters."

11. Palm Beach County – "Tabulation problems – only 56% of votes counted by 2 am."

12. Union County – When Optical Scan ballots were counted, ALL votes were for Republican candidates. Ballots had to be hand-counted.

ON THE BRIGHT SIDE

1. No problems reported with absentee ballots.

2. Voters for the first time were permitted to vote a provisional ballot if their name was not on the roster at the polling place.

3. More than 12,000 disabled or low literacy voters used the audio feature to cast ballots.

4. Once voters got a chance to vote, there seemed to be a relatively small number of difficulties and the touch screen technology was generally very well received by the voters.

RECOMMENDATIONS

1. Include "poll worker friendliness" in VSP certification process, and in county acceptance testing.

2. Encourage counties to have at least one trained county employee as a poll worker in every polling place, at least for the first election following conversion to a new system.

3. Encourage counties other than the 9 Votomatic/Poll Star counties to wait until after the March 2004 primary election to convert to a new voting system. They fan learn from the 9, and the vendor support community will not be taxed beyond what it takes to convert the 9 counties.

4. Test new voting equipment in (several) small, local elections, mock voting, and early voting prior to being used in a statewide election.

5. "Over build" trouble shooting and telephone capacity for election day response to problems from polling places and voters for the first statewide election using new voting equipment.

6. Determine if the equipment problems (i.e. language capability, activation procedures, etc.) in Florida apply to voting systems certified for use in California elections